



# TEST REPORT

**AS 60529**  
**Degrees of protection provided by enclosures**  
**(IP Code)**

**Test Report**  
Reference No. .... : **11806581-SA00**  
Tested by (+ signature) ..... : Jewel Marbebe  
**PROJECT ENGINEER**  
Approved by (+ signature) ..... : Rajasekar Perumanandham  
**PROJECT ENGINEER**  
Date of issue ..... : 12 June 2017  
Date of testing ..... : August – September 2016  
Contents ..... : 18 pages


**Laboratory details**  
Name ..... : **UL International New Zealand Ltd**  
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**Test specification**  
Standard ..... : AS 60529 – 2004

**Client details**  
Applicant ..... : Allegion (New Zealand) Ltd  
Address ..... : 437 Rosebank Road, Avondale, Auckland 1026, NEW ZEALAND

**Product details** (see additional details on page 3)  
Type of test object ..... : Electronic Locks  
Model/type reference ..... : MI-480S, MI-5200S, MI-6800, MI-6000, S-6000, S-6800 and S-480  
Rating ..... : IP54

**Accreditation details**



IANZ

ACCREDITED LABORATORY

Accreditation No. 69

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

TRF revision 160223

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**Possible results**

Test case does not apply to the test object.....: N(.A.)

Test sample does meet the requirement .....: P(ass)

Test sample does not meet the requirement .....: F(ail)

**General remarks**

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

"(see appended results)" refers to results appended to the report.

The test results presented in this report relate only to the samples tested.

The test samples were provided by the client and were tested as submitted.

All measurements within this test report are made using instruments with an accuracy in accordance with IECCE CTL Decision Sheet DSH 251E. Details of specific measurement uncertainty are available upon request.

This report does not contain corrections or erasures.

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**Specific remarks**

Electronic lock models MI-480S, MI-5200S, MI-6800 and MI-6000 were previously assessed by UL International New Zealand Ltd report reference 11389888-SA00 issued dated 05 September 2016.

This report addresses the addition of models S-6000, S-6800 and S-480 which are identical to models MI-6000, MI-6800 and MI-480S respectively except varying chassis colour only.

Testing have been conducted on outdoor side only of all the four Electronic lock models MI-480S, MI-5200S, MI-6800 and MI-6000 and IP54 is applicable for outdoor side only of the Electronic locks.

The test results in this report are applicable to all the models unless otherwise specified.

**Statement of results**

The test samples were assessed for a classification of IP54 in accordance with the test specification.

The test samples COMPLY with the tests for a classification of IP54.



**Product details**

Enclosure classification..... : IP54  
Enclosure type..... : thermoplastic and metal  
Conductor entry ..... : none  
Product mass..... : see model variants table  
Product dimensions ..... : see model variants table

**Model variant table**

Model:	MI-480S and S-480	MI-5200S	MI-6800 and S-6800	MI-6000 and S-6000
Mass (kg)	0.96	1.25	2.02	2.03
Dimension (mm; mounted, excluding handle)	165(H) x 90(L) x 93(D)	210(H) x 93(L) x 93(D)	303(H) x 68(L) x 94(D)	300(H) x 70(L) x 92(D)



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Clause	Requirement – Test	Remark	Result
1.	SCOPE AND OBJECT		NOTED
2.	NORMATIVE REFERENCES		NOTED
3.	DEFINITIONS		NOTED
4.	DESIGNATIONS		NOTED
5.	DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS AND AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL		NOTED
6.	DEGREES OF PROTECTION AGAINST INGRESS OF WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL		NOTED
7.	DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE ADDITIONAL LETTER		NOTED
8.	SUPPLEMENTARY LETTERS		NOTED
9.	EXAMPLES OF DESIGNATIONS WITH THE IP CODE		NOTED
10.	MARKING		NOTED
	Requirements for marking given in relevant product standard		
11.	GENERAL REQUIREMENTS FOR TESTS		NOTED
12.	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL		N
13.	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL		P
13.1	Test means and main test conditions as per Table 7		N
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4		N
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4		N
13.4	Dust test for first characteristic numerals 5 and 6		P
	Test made using dust chamber as per Figure 2		P
	Category 1 – with underpressure		N
	Category 2 – without underpressure		P
13.5	Special conditions for first characteristic numeral 5		P

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Clause	Requirement – Test	Remark	Result
13.5.1	Test conditions for first characteristic numeral 5	Category 2	P
13.5.2	Acceptance conditions for first characteristic numeral 5		P
	Talcum powder not accumulated in quantity or location such as could interfere with correct operation or impair safety		P
	No dust deposited where it could lead to tracking along creepage distances		P
13.6	Special conditions for first characteristic numeral 6		N
14.	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL		P
14.1	Test means and main test conditions as per Table 8		P
14.2	Test conditions		P
	Tests conducted with fresh water as specified		P
	Water temperature	17 °C	
14.2.1	Test for second characteristic numeral 1 with the drip box		N
14.2.2	Test for second characteristic numeral 2 with the drip box		N
14.2.3	Test for second characteristic numeral 3 with the oscillating tube or spray nozzle		N
14.2.4	Test for second characteristic numeral 4 with the oscillating tube or spray nozzle		P
	Test means	oscillating tube	
	Enclosures subjected to spraying water through angle of almost 360°, 180° either side of vertical		P
	Water flow rate	0.07 l/min per hole	
	Test duration	10 min	
14.2.5	Test for second characteristic numeral 5 with the 6.3 mm spray nozzle		N
14.2.6	Test for second characteristic numeral 6 with the 12.5 mm spray nozzle		N
14.2.7	Test for second characteristic numeral 7		N
14.2.8	Test for second characteristic numeral 8		N
14.3	Acceptance conditions		P
	No water entered enclosure; or		N
	If water has entered:		P
	Not sufficient to interfere with correct operation of the equipment or impair safety		P



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Clause	Requirement – Test	Remark	Result
	Not deposited on insulation parts where it could lead to tracking along creepage distances		P
	Not reach live parts or windings not designed to operate when wet		P
	Not accumulate near cable end or enter cable	Battery operated; no cable entry	N
	Enclosure provided with drain holes; any water which enters does not accumulate and drains away		N
	Enclosure without drain holes, water cannot accumulate to reach live parts		P
15.	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE ADDITIONAL LETTER		N

PHOTOGRAPHS



Model MI-480S Outdoor Side View



Model MI-480S Indoor Side View

PHOTOGRAPHS



Model MI-480S Internal View

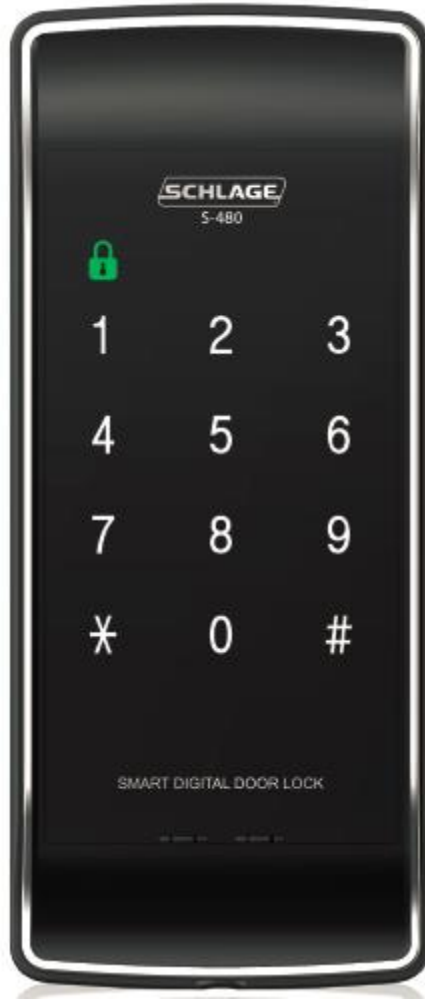


Model MI-480S Internal View





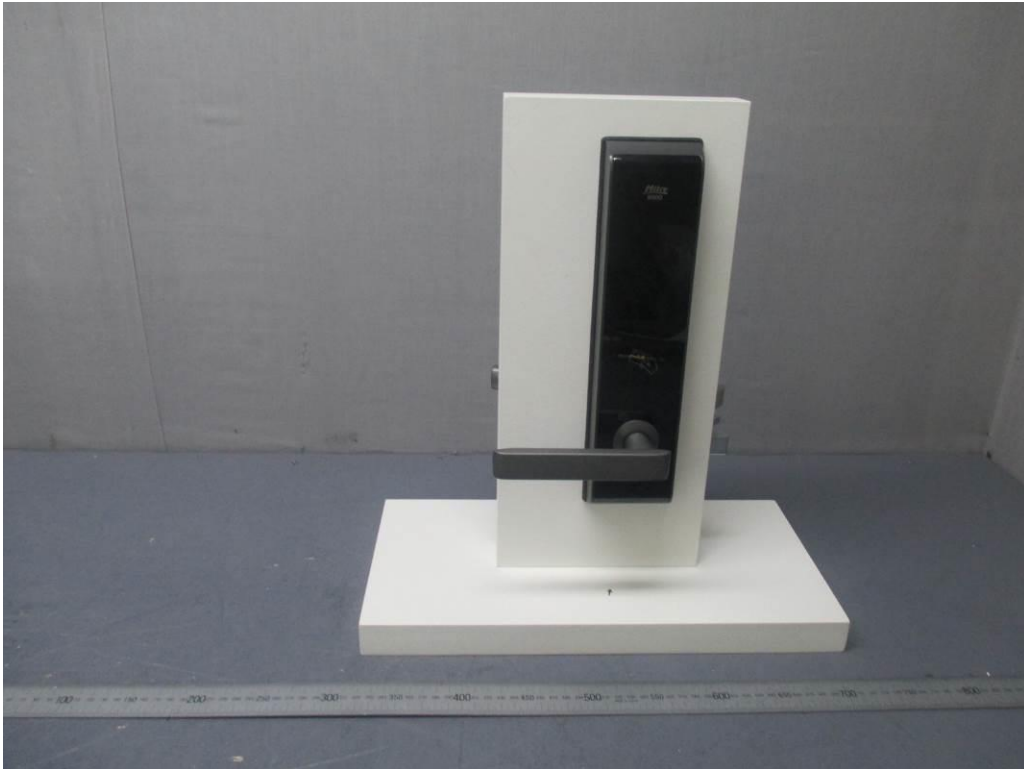
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Model S-480



PHOTOGRAPHS



Model MI-5200S Outdoor Side View



Model MI-5200S Indoor Side View

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Model MI-5200S Internal View



Model MI-5200S Internal View



PHOTOGRAPHS



Model MI-6800 Outdoor Side View

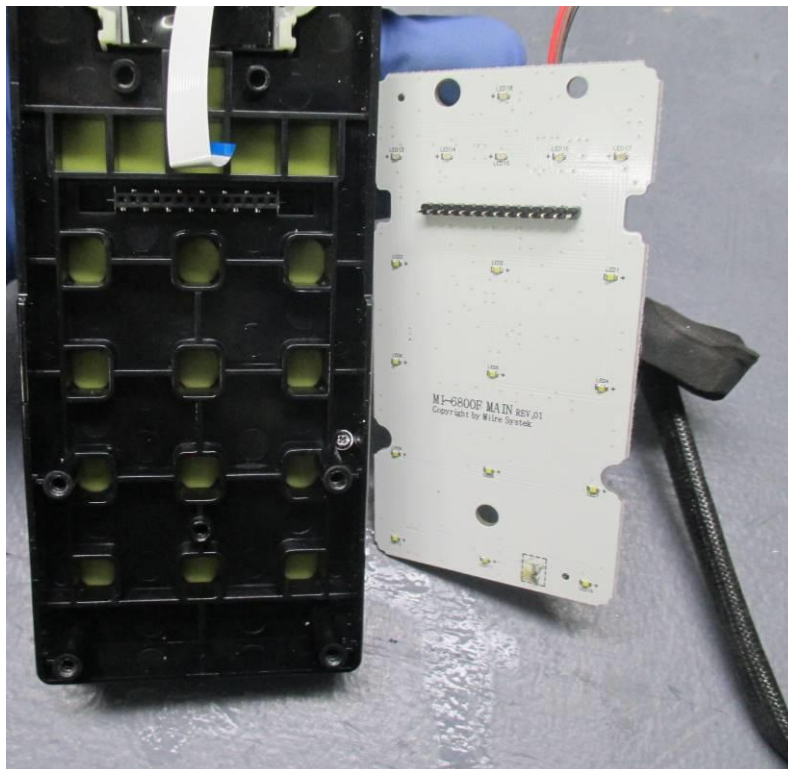


Model MI-6800 Indoor Side View

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Model MI-6800 Internal View



Model MI-6800 Internal View



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Model S-6800



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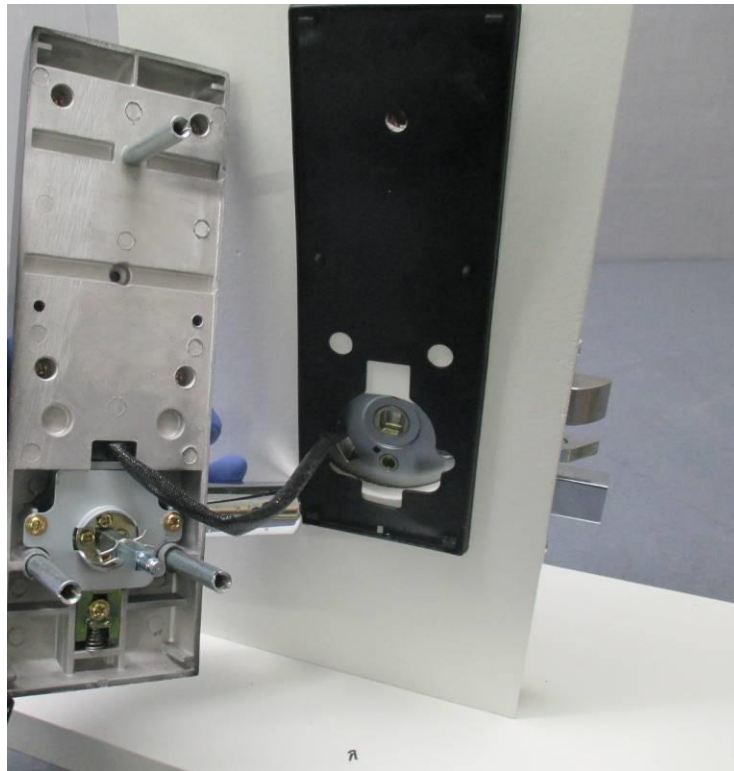


Model MMI-6000 Outdoor Side View

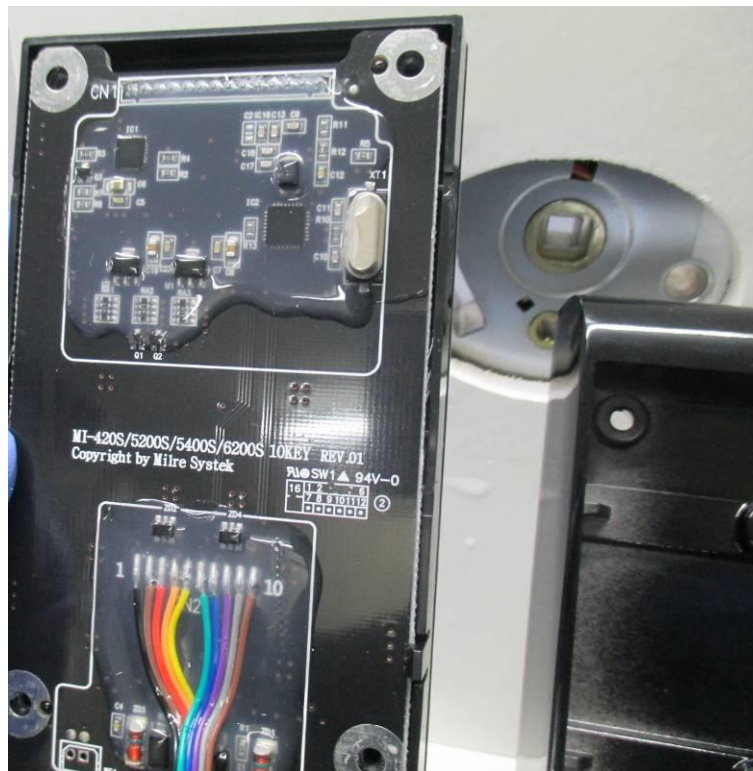


Model MMI-6000 Indoor Side View

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Model MMI-6000 Internal View



Model MMI-6000 Internal View





PHOTOGRAPHS



Model S-6000



REMARKS

No remarks.

**\*\* END OF TEST REPORT \*\***